

Appl. No 09/834,833
AMENDMENT DATED September 6, 2006

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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

Claim 1 (currently amended): A method of concurrently copying a plurality of items, the method being implemented in a computer, the method comprising:

a parent process checking if [[an]] a first item in said plurality is a file or a directory, spawning a new process; and;

said parent process conditionally copying the first item if the first item is found during the checking to be a file, copying the file and alternatively creating a child process;

wherein a current process in the computer performs the spawning or the copying;

wherein the new process, if spawned, executes simultaneously or contemporaneously with the current process, and

after creation, the new child process performs the spawning or checking, the conditionally copying and the alternatively creating, with another item in the directory represented by the first item; and

wherein the current parent process performs the spawning or the copying with yet another checking, the conditionally copying and alternatively creating, with a second item in said plurality.

Claims 2-3 (canceled).

Claim 4 (currently amended): The method of claim 1 further comprising, prior to the spawning creating:

comparing a current number of processes, started created for copying, with a limit;
and

waiting if the current number is greater than or equal to the limit.

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Appl. No **09/834,833**

AMENDMENT DATED September 6, 2006

Claim 5 (currently amended): ~~A method of copying items implemented in a computer, the method comprising:~~

~~creating a process if an item to be copied is a directory; and
copying the item if the item is a file, and prior to the copying:~~

The method of Claim 1 further comprising, prior to the creating:

the parent process increasing a limit on a resource; and
the child process using the resource at the increased limit during copying.

Claim 6 (original): The method of claim 5 wherein:
the resource is number of open files.

Claim 7 (original): The method of claim 5 wherein:
the resource is file size.

Claim 8 (original): The method of claim 5 wherein:
the resource is memory.

Claim 9 (original): The method of claim 8 wherein:
the memory is organized as a stack.

Claim 10 (original): The method of claim 8 wherein:
the memory is organized as a heap.

Claim 11 (original): The method of claim 1 wherein the copying comprises:
transferring data from the file into a temporary buffer;
locking the temporary buffer; and
invoking a direct memory access (DMA) process for making a copy from the
temporary buffer.

Claim 12 (currently amended): ~~A method of copying items implemented in a computer, the method comprising:~~

~~creating a process if an item to be copied is a directory; and~~

Appl. No **09/834,833**

AMENDMENT DATED September 6, 2006

~~copying the item if the item is a file;~~

The method of Claim 1 further comprising wherein prior to the copying:

the parent process checking if the first item is a link to itself, and performing said copying only if the first item is not a link to itself.

Claim 13 (original): The method of claim 12 wherein:
the checking includes a string comparison operation.

Claim 14 (currently amended): ~~A method of copying items implemented in a computer, the method comprising:~~

~~creating a process if an item to be copied is a directory; and~~

~~copying the item if the item is a file;~~

~~wherein~~

The method of Claim 1 further comprising, during the copying:

the parent process sending an email message if a resource at a destination is full;

wherein the email message is sent to an email address of a user that started the method.

Claim 15 (original): The method of claim 14 further comprising, during the copying:
waiting to be restarted subsequent to sending the email message.

Claim 16 (original): The method of claim 15 wherein said waiting comprises:
sending a signal to self to suspend execution.

Claim 17 (previously presented): The method of claim 15 further comprising, during the copying:

recopying said file from beginning, on being restarted.

Claim 18 (previously presented): The method of claim 14 wherein:

the email address is identified from a password file based on an identity of said user.

Appl. No **09/834,833**

AMENDMENT DATED September 6, 2006

Claim 19 (previously presented): The method of claim 1 wherein:

said spawning is performed only if said directory is not a current directory and not a parent directory.

Claims 20-28 (canceled).

Claim 29 (currently amended): An apparatus for concurrently copying items in storage media, the apparatus comprising:

means for ~~spawning a process~~ checking if an item to be copied is a file or a directory; and

means for conditionally copying the item if the item is a file and alternatively creating a child process;

wherein said child process comprises a copy of said means for checking and said means for conditionally copying and alternatively creating;

wherein each item is input to ~~at least one of~~ said means for spawning and said means for conditionally copying.

Claim 30 (currently amended): The apparatus of claim 29 further comprising:

means for sending an email message if the means for conditionally copying encounters an error.

Claim 31 (original): The apparatus of claim 29 further comprising:

means for increasing a limit on a resource to maximum.

Claim 32 (currently amended): The apparatus of claim 29 wherein said means for conditionally copying comprises:

means for using a temporary buffer; and

means for using direct memory access (DMA).

Claim 33 (original): The apparatus of claim 29 further comprising:

means for checking if the item is a link to itself.

Appl. No **09/834,833**

AMENDMENT DATED September 6, 2006

Claim 34 (currently amended): The method of Claim 1 wherein:

the parent process is started with an instruction to perform said method for each item in the directory.

Claim 35 (canceled).

Claim 36 (currently amended): The method of Claim 1 wherein:

the number of processes created by ~~spawning~~ corresponds to the number of directories to be copied.

Claim 37 (canceled).

Claim 38 (previously presented): The method of Claim 1 further comprising:

checking if the file is in a list of items to be excluded from copying; and
performing said copying only if the file is not in said list.

Claim 39 (previously presented): The method of Claim 1 wherein:

the file is copied to multiple destinations if specified by the user.

Claims 40-42 (canceled).

Claim 43 (currently amended): A computer readable storage medium encoded with software, the software comprising instructions to archive an item in a computer by:

~~spawning a new process, if the item is a directory; and~~

~~copying the item, if the item is a file;~~

~~wherein a current process performs the spawning or the copying; and~~

using a current process to check if said item is a file or a directory;

using the current process to conditionally copying the item if the item is found during

the checking to be a file and alternatively creating a new process; and

using the new process to perform the checking, the conditional copying and the

alternatively creating, with another item in the directory represented by said item;

Appl. No **09/834,833**

AMENDMENT DATED September 6, 2006

wherein the new process if ~~spawned~~ created executes simultaneously or contemporaneously with the current process.

Claim 44 (canceled).

Claim 45 (currently amended): The ~~method of Claim 44~~ medium of Claim 43 wherein:
the current process calls a function to recursively spawn a plurality of ~~child~~ new
processes including said new process; and

on return from the function, the current process waits for all ~~child~~ new processes to finish.

Claim 46 (new): A method of concurrently copying a list of items implemented in a computer, the method comprising:

a parent process in said computer checking if a first item in said list is a file or a directory;

said parent process conditionally copying the first item if the first item is found during the checking to be a file and alternatively creating a child process in said computer after changing a default limit on a resource to a maximum limit;

after creation, the child process inherits the maximum limit and performs the checking, the conditionally copying and the alternatively creating, with another item in the directory represented by the first item;

wherein after said creation, the parent process performs the checking, the conditionally copying and alternatively creating, with a second item in said list;

wherein at least one of the parent process and the child process:

allocates memory to hold at least a temporary buffer and a stack, stores in said stack an absolute path and a local path to said directory, checks if an entry in said directory is a symbolic link, checks if the symbolic link is circular, and ignores the link if circular;

checks if a destination is full and sends an email message if a result thereof is true and waits to be restarted subsequent to said sending; and

Appl. No **09/834,833**

AMENDMENT DATED September 6, 2006

transfers data to said temporary buffer, locks said temporary buffer and invokes a direct memory access process for making a copy from said temporary buffer to said destination.

Claim 47 (new): The method of Claim 46 further comprising:

using operating system stack space in said computer by making recursive calls when memory allocated for said stack is used up.

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